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June 22, 2000

BOX PATENT APPLICATION
Assistant Commissioner for Patents
Washington, D.C. 20231

Re: Application of **Jose Luis GONZALEZ DE PRADO**

METHOD AND SYSTEM FOR MULTIPLE ACCESS IN A RADIOCOMMUNICATION SYSTEM
Our Ref. Q59609

Dear Sir:

Attached hereto is the application identified above including 10 sheets of the specification, claims and abstract, 2 sheets of formal drawings, executed Assignment and PTO 1595 form, and executed Declaration and Power of Attorney.

Please see attached preliminary amendment before calculating Government filing fee.

The Government filing fee is calculated as follows:

Total claims	13	-	20	=	0	x	$18.00	=	$.00
Independent claims	2	-	3	=	0	x	$78.00	=	$.00
Base Fee									$690.00
TOTAL FILING FEE									**$690.00**
Recordation of Assignment									$40.00
TOTAL FEE									**$730.00**

Checks for the statutory filing fee of $690.00 and Assignment recordation fee of $40.00 are attached. You are also directed and authorized to charge or credit any difference or overpayment to Deposit Account No. 19-4880. The Commissioner is hereby authorized to charge any fees under 37 C.F.R. §§ 1.16 and 1.17 and any petitions for extension of time under 37 C.F.R. § 1.136 which may be required during the entire pendency of the application to Deposit Account No. 19-4880. A duplicate copy of this transmittal letter is attached.

Priority is claimed from June 25, 1999 based on European Application No. 99500108.8. The priority document will be filed at a later date.

Respectfully submitted,
SUGHRUE, MION, ZINN,
MACPEAK & SEAS, PLLC
Attorneys for Applicant

By: _____
David J. Cushing
Registration No. 28,703

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Jose Luis GONZALEZ DE PRADO	Attorney Docket Q59609
Appln. No.: Not yet assigned	Group Art Unit: Not yet assigned
Filed: June 22, 2000	Examiner: Not yet assigned

For: METHOD AND SYSTEM FOR MULTIPLE ACCESS IN A RADIOCOMMUNICATION SYSTEM

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination, please amend the above-identified application as follows:

IN THE CLAIMS:

Claim 6, line 1, delete "any one of claims 1 to 4" and insert --claim 1--.

Claim 13, line 1, delete "any one of claims 8 to 12" and insert --claim 8--.

IN THE ABSTRACT:

After the heading, delete the title in its entirety.

After the abstract, delete "(Figure 1).

REMARKS

Entry and consideration of this Amendment is respectfully requested.

Respectfully submitted,

David J. Cushing
Registration No. 28,703

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Date: June 22, 2000

METHOD AND SYSTEM FOR MULTIPLE ACCESS IN A RADIOCOMMUNICATION SYSTEM

OBJECT OF THE INVENTION

The present invention relates to a method for allocating the radio and signalling resources, in general, of a multiple access radiocommunication system, which comprises a set of fixed units such that each of them has an coverage area or cell associated with it. Within each cell are located a plurality of remote units, which employ time division multiple access (TDMA) techniques for communicating with their fixed unit.

The multiple access method is of special, but not exclusive, application in a point-to-multipoint radiocommunication system, so that the allocation of the different time slots that constitute a frame, in the uplink direction of the communication, is carried out in a dynamic mode as a function of the traffic requirements of each of the remote units that constitute the radiocommunication system.

STATE OF THE ART

A radiocommunication system is divided into a plurality of cells, and each cell comprises a fixed unit normally connected by means of a cable network to a telephone transport network such as a public switched telephone network (PSTN).

Each fixed unit has associated a coverage area inside which it establishes communications via radio with those remote units located within its coverage area, by using time division multiple access (TDMA) techniques, that is, the frequency band is divided into time slots which are assigned to the sending and receiving of signals. Consequently, a number of communications can be transmitted simultaneously in a single frequency band.

In a conventional point-to-multipoint radiocommunication system, each remote unit transmits, in the uplink direction of the communication, in addition to the data bursts corresponding to the communications already established, signalling information relative to both the communications that are already established and to the new ones arising in the remote units.

This gives rise to the appearance within a TDMA frame of one or more time slots reserved for signalling, which have to be shared among all the remote units.

A commonly employed method consists in the cyclic allocation of

usage times for these signalling slots in an inflexible manner as a function of the identity of each remote unit, in the form of a signalling multiframe.

In this way, each remote unit must wait for its signalling time to appear for sending a limited message, limited in length because the signalling channel is shared among all the remote units in an inflexible manner regardless of whether they require to signal or not. Thus, although a remote unit has no message to send, it has to occupy the allocated time, for example, with a stuffing message.

Similarly, if a remote unit has several messages to send, it must wait for successive turns in order to transmit the information in question, even although there are time slots in the same frame which are filled with stuffing information, that is there is an inflexible turn or order.

Consequently, a fixed unit will be able to communicate simultaneously with as many remote units as there are time slots for signalling in the signalling multiframe in the uplink direction of the communication.

As a consequence, it is necessary to provide a method whereby the number of remote units that can occupy the signalling multiframe is increased, without excessively increasing the number of time slots into which the signalling multiframe is divided, which would result in unacceptable delay times.

CHARACTERISATION OF THE INVENTION

The proposed multiple access method for a radiocommunication system overcomes the problems above indicated.

The radiocommunication system has its coverage area divided into a plurality of cells, so that within each cell there is at least one fixed unit that communicates with a plurality of remote units located inside the cell.

The access method avoids forming a signalling multiframe working with a fixed turn for transmitting. To this end, the fixed unit broadcasts over a pilot channel a predetermined number of virtual identities for signalling and that form the signalling multiframe, so that when a remote unit wishes to transmit information in the uplink direction, it selects one of the virtual identities received.

The fixed unit comprises a first controller means that establishes the number of virtual identities and, based on their occupancy level, increases or diminishes it. The occupancy level is a function of the traffic present at each

moment.

Thus, the signalling multiframe is only used by those remote units that have messages to send. This method makes allocation of the signalling multiframe more flexible, reducing signalling delays.

In brief, the number of remote units that can communicate simultaneously with a fixed unit is a function of the number of time slots into which the signalling multiframe is divided, it not being possible to increase these indefinitely without increasing, in turn, the signalling delay. Thus, by use of the method proposed, it is possible to increase the number of remote units since the multiframe time slots are distributed among those units which have to transmit signalling to the fixed unit.

BRIEF DESCRIPTION OF THE FIGURES

A more detailed explanation of the invention is provided in the following description, based on the attached figures, in which:

- figure 1 shows a diagram of a point-to-multipoint radiocommunication system according to the invention,
- figure 2 shows a block diagram of a fixed unit according to the invention, and
- figure 3 shows a block diagram of a remote unit according to the invention.

DESCRIPTION OF THE INVENTION

Figure 1 shows a preferred embodiment of the point-to-multipoint radiocommunication system, which comprises a set of fixed units 11-1 to 11-n such that each one has associated with it a cell or coverage area of the radiocommunication system.

Each fixed unit 11-j (where j = 1, ..., n) is connected via radio with a set of remote units 12-1 to 12-m located within its coverage area. To carry out the communications between the different remote units 12-1 to 12-m and the fixed unit 11-j use is made of time division multiple access (TDM/TDMA) techniques.

The traffic generated by a remote unit 12-i (where i = 1, ..., m) is directed through the fixed unit 11-j to a telephone transport network such as a public switched telephone network (PSTN).

According to the TDM/TDMA technique, a carrier frequency is divided into time slots that are grouped into frames, there being frames for both

transmission directions. Within the TDMA frame there are time slots reserved for signalling between the fixed unit 11-j and the remote units 12-1 to 12-m, which form a signalling multiframe.

When a remote unit 12-i wishes to transmit information relative to a communication, it inserts its data bursts into an allocated time slot of the frame. The time slot allocation is carried out by a first controller means 111 belonging to the fixed unit 11-j (see figure 2).

According to the time slot allocation method proposed, the first controller means 111 incorporates an algorithm that determines a first predetermined number of virtual identities for signalling and implements it on the basis of the traffic conditions of the radiocommunication system. The virtual identities proposed form the signalling multiframe and are independent of the true identities of each remote unit 12-i, which shall be used for other purposes (management).

The virtual identities created are supplied to a first radio transmitter 112 of the fixed unit 11-j to be broadcast over a pilot channel, being received in the remote unit 12-i by means of a second radio receiver 123.

Thus, when a subscriber connected to a remote unit 12-i wishes to transmit a signalling message, for example in order to set up a communication, the remote unit 12-i selects one of the virtual identities available, independently of its true identity, by employing a second controller means 121 (see figure 3).

The second controller means 121 receives from the second radio receiver 123 the proposed identities and makes the selection of one of them on the basis of traffic requirements and on the nature of the information to be transmitted, be this voice, data, video, television or other digital signal. The duration of traffic bursts is therefore variable.

The virtual identity selected shall indicate the order of transmission within the signalling multiframe. Thus, the remote unit 12-i shall start to transmit, by means of a second radio transmitter 122, signalling messages in the time slot allocated within an uplink frame. The number of virtual identities conditions the duration of the signalling multiframe, there being a maximum duration permitted.

A first radio receiver 113 of the fixed unit 11-j receives the signalling message and feeds it to the first controller means 111, which analyses it and

records the virtual identity occupied.

The occupancy of this virtual identity is transmitted over the broadcast channel in order to prevent it being used by another remote unit 12-k, consequently, the signalling multiframe becomes reduced and shall try to occupy another virtual identity of the signalling multiframe.

When a signalling process is over, the virtual identity is once again made available for selection for another communication, and so on successively. The signalling multiframe is dynamic; that is, it is organised as a function of the number of virtual identities proposed at any given moment.

If the virtual identities proposed by the fixed unit 11-j are gradually taken up, the first controller means 111 increases the number of proposed virtual identities within the signalling multiframe. Consequently, the duration of the signalling multiframe increases and the spacing between bursts corresponding to a given communication also increases. As the signalling processes are gradually concluded, the first controller means 111 reduces the number of virtual identities proposed within the signalling multiframe.

During system start-up, and while a given traffic situation exists, the first controller means 111, by default, establishes a reduced number of virtual identities for selection by the remote units 12-1 to 12-m. For example, if the virtual identities 1 to 4 are put into play, a four time slots multiframe is obtained.

Thus, in the case where there is only one remote unit 12-i with a call set-up process in course, it will choose one of the identities in play and will make use of the corresponding time slot. Since there are only four time slots, the multiframe duration is short, and the bit flow that the remote unit 12-i enjoys is high.

The multiframe duration (time between consecutive bursts transmitted from the same remote unit 12-i), gradually increases as virtual identities are added in order to permit signalling from more remote units 12-1 to 12-m, and, in addition, the duration of the burst from each of the remote units 12-1 to 12-m diminishes.

As the radio resources of the system are released, the fixed unit 11-j puts the released virtual identities into play again, to be assigned to new calls and thereby avoid having to introduce more virtual identities than those necessary, which would lengthen the duration of the multiframe needlessly.

The fixed unit 11-j transmits, over the broadcast channel, the virtual identities that are presently occupied, with an input acknowledgement message. The remote unit 12-i that detects this acknowledgement message, shall continue to use its virtual identity and the corresponding time slot, while the rest shall interpret this as a warning of virtual identity and time slot occupancy.

In the event that another remote unit 12-k wishes to initiate a call set-up process, it shall select another virtual identity available. If two remote units 12-i and 12-k coincide in the use of the same virtual identity, and consequently of the same time slot, the fixed unit 11-j detects this collision and broadcasts a "not confirmed" message for the right to employ said virtual identity and time slot. The remote units 12-i and 12-k that tried to gain access, decline to use said virtual identity and time slot, open a time-out period and opt for the virtual identities proposed at that moment.

CLAIMS

1. - Method for multiple access in a radiocommunication system that employs time division multiple access (TDMA) techniques, such that a signalling multiframe is used, in both transmission directions, for interchanging signalling messages between at least one fixed unit (11-j) and a set of remote units (12-1 to 12-m) located within the coverage area associated with said fixed unit (11-j); **characterised** in that said signalling multiframe is formed by a predetermined number of virtual identities for signalling generated by a first controller means (111), included in said fixed unit (11-j), for the purpose of interchanging signalling messages so that the number of said virtual identities is less than the number of said remote units (12-1 to 12-m).

2. - Method for multiple access according to claim 1, **characterised** in that said virtual identities are independent of the true identities of said remote units (12-1 to 12-m) and are broadcast by a first radio transmitter (112), included in said fixed unit (11-j), over a pilot channel in the downlink transmission direction.

3. - Method for multiple access according to claim 2, **characterised** in that said pilot channel is received by means of a second radio receiver (123), included in a remote unit (12-i), being fed to a second controller means (121) for recording the predetermined number of virtual identities for signalling.

4. - Method for multiple access according to claim 3, **characterised** in that a virtual identity is selected by said second controller means (121) when said remote unit (12-i) wishes to transmit a signalling message via a second radio transmitter (122), for which purpose it inserts the signalling message into the virtual identity selected and it is received in a first radio receiver (113), included in said fixed unit (11-j).

5. - Method for multiple access according to claim 4, **characterised** in that said signalling multiframe received in said first radio receiver (113) is supplied to said first controller means (111) in order that said selected virtual identity be marked as occupied and thereafter is broadcast by means of said pilot channel.

6. - Method for multiple access according to any one of claims 1 to 4, **characterised** in that said signalling multiframe is formed by a

maximum number of virtual identities for signalling that is a function of the maximum duration permissible for said signalling multiframe.

7. - Method for multiple access according to claim 6, **characterised** in that the number of virtual identities for signalling generated by said first controller means (111) is a function of the level of occupancy of said signalling multiframe.

8. - System for multiple access in a radiocommunication system which comprises at least one fixed unit (11-j) having an associated coverage area within which is located a set of remote units (12-1 to 12-m), such that they employ time division multiple access (TDMA) techniques to establish communications, so that they interchange signalling messages by means of a signalling multiframe that is used in both transmission directions; **characterised** in that said fixed unit (11-j) comprises a first controller means (111) for generating a predetermined number of virtual identities for signalling, these being grouped in said signalling multiframe, so that the number of said virtual identities is less than the number of said remote units (12-1 to 12-m).

9. - System for multiple access according to claim 8, **characterised** in that said fixed unit (11-j) comprises a first radio transmitter (112) for broadcasting said virtual identities over a pilot channel in the downlink direction of the transmission, such that said virtual identities are independent of the true identities of said remote units (12-1 to 12-m).

10. - System for multiple access according to claim 9, **characterised** in that said remote unit (12-i) comprises a second radio receiver (123) for receiving said pilot channel, that is supplied to a second controller means (121) for recording the predetermined number of virtual identities for signalling.

11. - System for multiple access according to claim 10, **characterised** in that said second controller means (121) is adapted for selecting a virtual identity when said remote unit (12-i) wishes to transmit a signalling message so as to insert the signalling message inside the virtual identity selected, so as to be transmitted by a second radio transmitter (122) so that a first radio receiver (113), included in said fixed unit (11-j), receives said signalling message.

12. - System for multiple access according to claim 11,

characterised in that said first radio receiver (113) is adapted for supplying said first controller means (111) with said signalling multiframe, in order that said selected virtual identity is marked as occupied and thereafter is broadcast over said pilot channel.

13. - System for multiple access according to any one of claims 8 to 12, **characterised** in that said first controller means (111) is adapted for generating a number of virtual identities for signalling as a function of the level of occupancy of said signalling multiframe, so that there is a maximum number of virtual identities for signalling which is a function of the maximum duration permissible for said signalling multiframe.

ABSTRACT

Method and system for multiple access in a radiocommunication system

Method for multiple access in a radiocommunication system which avoids forming a signalling multiframe with an inflexible turn of transmission. A fixed unit (11-j) broadcasts over a pilot channel a predetermined number of virtual identities for signalling which form the signalling multiframe, so that when a remote unit wishes to transmit, it selects one of the virtual identities received.

The time slots in the signalling multiframe are distributed among those remote units (12-1 to 12-m) which have signalling messages to transmit to the fixed unit (11-j).

(Figure 1)

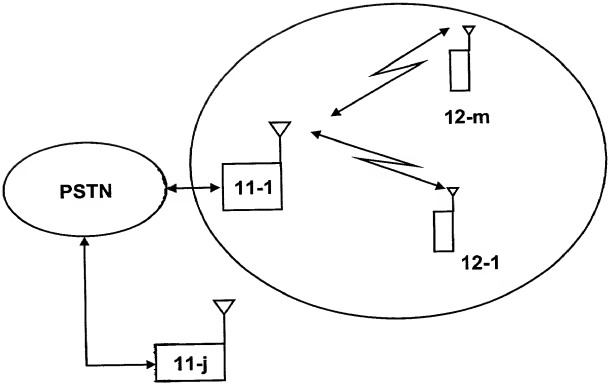

FIG. 1

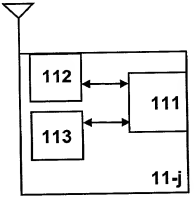

FIG. 2

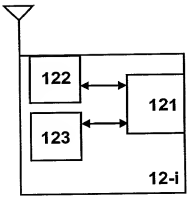

FIG. 3

PTO/SB/105 (8-96)
Approved for use through 9/30/98. OMB 0651-0032
Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Declaration and Power of Attorney for Patent Application

Déclaration et Pouvoirs pour Demande de Brevet

French Language Declaration

En tant que l'inventeur nommé ci-après, je déclare par le présent acte que:

As a bellos named inventor, Y hereby declare that:

Mon domicile, mon adresse postale et ma nationalité sont ceux figurant ci-dessous à côté de mon nom.

My residence, post office address and citizenship are as stated next to my name.

Je crois être le premier inventeur original et unique (si un seul nom est mentionné ci-dessous), ou l'un des premiers co-inventeurs originaux (si plusieurs noms sont mentionnés ci-dessous) de l'objet revendiqué, pour lequel une demande de brevet a été déposée concernant l'invention intitulée

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

METHOD AND SYSTEM FOR MULTIPLE ACCESS IN A RADIOCOMMUNICATION SYSTEM.

et dont la description est fournie ci-joint à moins que la case suivante n'ait été cochée:

☐ **a été déposée le** _____
sous le numéro de demande des Etats-Unis ou le numéro de demande international PCI'
_____ **et modifiée le**
_____ **(le cas échéant).**

the specification of which is attached hereto unless the following box is checked:

☐ **was filed on** _____
as United States Application Number or PCT International Application Number
_____ **and was amended on**
_____ **(if applicable).**

Je déclare par le présent acte avoir passé en revue et compris le contenu de la description ci-dessus, revendications comprises, telles que modifiées par toute modification dont il aura été fait référence ci-dessus.

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

Je reconnais devoir divulguer toute information pertinente à la brevetabilité, comme défini dans le Titre 37, § 1.56 du Code fédéral des réglementations.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56.

French Language Declaration

Je revendique par le présent acte avoir la priorité étrangère, en vertu du Titre 35, § ll9(a)-(d) ou 365(b) du Code des Etats-Unis, sur toute demande étrangère de brevet ou certificat d'inventeur ou, en vertu du Titre 35, § 365(a) du même Code, sur toute demande internationale PCT désignant au moins un pays autre que les Etats-Unis et figurant ci-dessous et, en cochant la case, j'ai aussi indiqué ci-dessous toute demande étrangère de brevet, tout certificat d'inventeur ou toute demande internationale PCT ayant une date de dépôt précédant celle de la demande à proposde l aquelle une priorité est revendiquée.

I hereby claim foreign priority under Title 35, United Stales Code, § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's cenificate, or § 365(a) of any PCT International application which designated at least one country other than the United States, listed below, and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed.

Prior foreign application(s)
Demande(s) de brevet antérieure(s)

Number (Numéro)	Country (Pays)	Day/Month/Year/Filed (Jour/Mois/Annee de depot)	Priority Not Claimed (Droit de priorite non revendique)
99500108.8	EUROPE	25th June 1999	

Je revendique par le présent acte tout bénefice, en vertu du Titre 35, § 119(e) du Code des Etats-Unis, de toute demande de brevet provisoire effectuée aux Etats-Unis et figurant ci-dessous.

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below.

(Application No.)
(N° de demande)

(Filing Date)
(Date de dépôt)

(Application No.)
(N° de demande)

(Filing Date)
(Date de dépôt)

Je revendique par le présent acte tout bénefice, en vertu du Titre 35, § 120 du Code des Etats-Unis, de toute demande de brevet effectuée aux Etats-Unis, ou en vertu du Titre 35, § 365(c) du même Code, de toute demande internationale PCT désignant les Etats Unis et figurant ci-dessous et, dans la mesure où l'objet de chacune des revendications de cette demande de brevet n'est pas divulgué dans la demande antérieure américaine ou internationale PCT, en vertu des dispositions du premier paragraphe du Titre 35, § 112 du Code des Etats-Unis, je reconnais devoir divulguer toute information pertinente à la brevetabilité, comme défini dans le Titre 37, § 1.56 du Code fédéral des régle mentations, dont j'ai pu disposer entre la date de dépôt de la demande antérieure et la date de dépôt de la demande nationale ou internationale PCT de la présente demande:

I hereby claim the benefit under Title 35, United States Code. § 120 of any United States application(s), or 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject maner of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application.

(Application No.) (N° de demande)	(Filing Date) (Date de dépôt)	(Status: patented, pending, abandoned) (Statut: breveté, en cours d'examen, abandonné)
(Application No.) (N° de demande)	(Filing Date) (Date de dépôt)	(Status: patented, pending, abandoned) (Statut: breveté, en cours d'examen, abandonné

Je déclare par le présent acte que toute déclaration ci-incluse est, à ma connaissance, véridique et que toute déclaration formulée à partir de renseignements ou de suppositions est tenue pour véridique; et de plus, que toutes ces déclarations ont été formulées en sachant que toute fausse déclaration volontaire ou son équivalent est passible d'une amende ou d'une incarcération, ou des deux, en vertu de la Section 1001 du Titre 18 du Code des Etats-Unis, et que de telles déclarations volontairement fausses risquent de compromettre la validité de la demande d e brevet ou du brevel délivré à partir de celle-ci.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the applicalion or any patent issued thereon.

French Lanngуage Declaration

POUVOIRS: En tant que l'inventeur cité, je désigne par la présente l'(les) avocat(s) et/ou agent(s) suivant(s) pour qu'ils poursuive(nt) la precédure de cette demande de brevet et traite(nt) toute affaire s'y rapportant avec l'Office des brevets et des marques; *(mentionner le nom et le numéro d 'enregistrement).*

POWER OF A TTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith: *(list narnc and registration numbcr)*

I hereby appoint John H Mion Reg No 18,879 Donald E Zinn, Reg No 19,046 Thomas J Macpeak, Reg No 19,292, Robert J Seas, Jr., Reg No 21,092, Darryt Mexac, Reg No 23,063, Robert V Sloan, Reg No 22,775, Peter D Olexy, Reg No 24,513, J Frank Osira, Reg No 24,625, Waddell A Biggart, Reg No 24,861, Robert G McMorrow, Reg No 19,093, Louis Gubersky, Reg No 24,835, Neil B Siegel, Reg No 25,290, David J Cushing, Reg No 28,703, John R Inge, Reg No 26,916, Joseph J Rach, Jr., Reg No 26,577, Sheldon Y Landsman, Reg No 25,430, Richard C Turner, Reg No 29,710, Howard L Bernstein, Reg No 25,665, Alan J Kasper, Reg No 25,426, Kenneth J Burchfiel, Reg No 31,333, Gordon Kit, Reg No 30,764, Susan J Mack, Reg No 30,951, Frank L Bernstein, Reg No 31,484, Mark Boland, Reg No 32,197, William H Mandir, Reg No 32,156, Scott M. Daniels, Reg No 32,562, Bruns W Hannon, Reg No 32,778, Abraham J Rosner, Reg No 33,276, Bruce E Kramer, Reg No 33,725, Paul F Neals Reg No 33,102, and Brett S Sylvester, Reg No 32,765, my attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith, and request that all correspondence about the application be addressed to SUGHRUE, MION,ZINN, MACPEAK & SEAS PLLC, 2100 Pennsylvania Avenue, N W., Washington, D C 20037-3202

Adresser toute correspondance à:	Send Correspondence to: SUGHRUE, MION, ZINN, MACPEAR & SEAS 2100 Pennsylvania Avenue, N.W., Suite 800 Washington, D.C. 20037-3202
Adresser tout appel téléphonique à: *(nom et numéro de téléphone)*	Direct Telephone Calls to: *(name and felephone number)*

Nom complet de l'unique ou premier inventeur	Full name of sole or first inventor Jose Luis GONZALEZ DE PRADO
Signature de linventeur Date	Inventor's signature Date June 01, 2000
Domicile	Residence Madrid, SPAIN
Nationalité	Citizenship Spanish
Adresse postale	Post Office Address Ulises, 11 2°-B 28043 Madrid, Spain
Nom complet du second co-inventeur, le cas échéant	Full name of second joint inventor, if any
Signature du second inventeur Date	Second inventor's signature Date
Domicile	Residence
Nationalité	Citizenship
Adresse postale	Post Office Address

(Fournir les mèmes renseignements et la signature de tout co-inventeur supplémentaire.)

(Supply similar information and signature for third and subsequent joint inventors.)